

4227

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: S.E. Alaska

11-5613

DESCRIPTIVE REPORT.

Hydrog. Sheet No. (2) 4227 ^{W.D.} Add Work

LOCALITY:

Icy Strait

Lynn Canal to Eagle Point

1923

CHIEF OF PARTY:

J.H. Hawley

to accompany Wire Drag Sheet #2.

1999 2000 2001 2002 2003 2004

Season 1923.

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DESCRIPTIVE REPORT

to accompany Wire Drag Sheet #2.

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This report is made in accordance with Instructions issued to Captain J. H. Hawley, dated February 16, 1923.

The dragging and sweeping on this sheet extends in Icy Strait, Alaska, from about longitude $135^{\circ} 20'$ W. to longitude $135^{\circ} 39'$ W. and latitude $58^{\circ} 03'$ N. to latitude $58^{\circ} 17'$ N., or, roughly the southern half of Icy Strait from Point Sophia to Eagle Point, including the entrance to Port Frederick and all of Gedney Channel. This sheet is a continuation of 1922 work.

While several shoaler soundings than shown on present charts were obtained, only in Gedney Channel were shoals found that would be dangerous to vessels plying perhaps usual routes. It is said at Hoonah that some of the cannery tenders and other boats drawing 10 to 12 feet have used Gedney Channel in the past. In the center of the Eastern entrance to Gedney Channel, off Crist Point, a 10 foot spot was found on the 10 fathom curve. Further in the channel, in the center and off the same point where 33 feet is shown on charts, the drag just caught and shortly after slid off. No shoal sounding was obtained due to the drag sliding off so quickly. The effective depth of the drag was 20 feet here and it is considered very probable that this is the least water on the shoal spot. Later an effective depth of 15 feet was taken over this 20 foot spot. Several shoal spots of about 23 feet as shown on sheet were discovered at the Western entrance to Gedney Channel.

About 2 miles E. by N. of Scraggy Island soundings of 43 feet and 72 feet were discovered in water charted between 20 to 30 fathoms.

One-half mile off shore, midway between Neck and Sophia Points, shoals were discovered ranging between 20 to 30 feet where perhaps the same number of fathoms would be interpreted from chart #8302.

One-half mile North of Harry Island at Flynn Cove a 43 foot spot was found in water of about 20 fathoms on the chart.

A minute split of last year's work was swept over at Latitude $58^{\circ} 16'$ N. longitude $135^{\circ} 29'$ W.

The highest tide during dragging hours on sheet #2 was 14.8 feet above M.L.L.W. which occurred on April 18th. The lowest tide during dragging hours on sheet #2 was 0.0 above M.L.L.W., which occurred on April 19th. Other tidal data not available on ship at present as marigram is at Washington Office.

Except around Gedney Channel all work was done by the ship and launch SCANDINAVIA. In Gedney Channel the launches SCANDINAVIA and HELIANTHUS were used. In all cases both guiding launch and end launch worked with individual boat-sheet control

No splits have been detected in either boat-sheet or smooth-sheet plotting. On the smooth sheet the system of coloring is as follows:

19 feet and under	- -	brown
20 to 29 feet	- -	yellow
30 to 39 feet	- -	blue
40 to 59 feet	- -	red
60 to 79 feet	- -	purple
80 feet and over	- -	orange.

Charles Shaw

Commanding Str, EXPLORER.

Note:

This report should be referred to Captain J. H. Hawley for additional remarks if desirable.

STATISTICS, SHEET NO.2 USS EXPLORER.

Date. 1923.	Letter	Vol.	Positions.	Sdgs.	Stat. Mi.	Vessels.
April 9	A	1	37	0	12.7	SCANDINAVIA & EXPLORER
" 10	B	1	32	0	11.7	" "
" 12	C	1	29	3	8.1	" "
" 13	D	1	25	2	4.4	" "
" 18	E	1	33	4	11.1	" "
" 19	F	1	35	0	7.8	" "
Sept. 19	G	1	15	4	3.7	SCANDINAVIA & HELIANTHUS
" 20	H	1	20	7	6.4	" "
" 21	J	2	34	1	6.3	" "
Oct. 2	K	2	6	0	.7	" "
Totals:			266	21	72.9	

Automatic tide gauge and staff at Hooniah Cannery.
Hooniah tides used exclusively on this sheet.

April 9, 1924

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
1 volumes of sounding records for

HYDROGRAPHIC SHEET 4227 (*add'l work*)

Locality: Icy Strait, S. E. Alaska

Chief of Party: J. H. Hawley in 1923

Plane of reference is mean lower low water reading
5.9 ft. on tide staff at Hooniah

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks



Chief, Division of Tides and Currents.

Wire Drag Sheet No 4227

(Season of 1923)

This additional work done in 1923, completes the drag work on this sheet. This work conforms to all the requirements and has been well executed and carefully plotted.

The old area and depth tracing was corrected so that it now shows the combined results of both seasons work.

Attention is called to the sounding at Flynn Cove about half a mile north of Harry Island. This sounding is seventy feet in the sounding record and is also shown as seventy feet on the boatsheet. It is mentioned in the descriptive report as forty three feet and is shown as forty three feet on the tracing filed with letter No 200, 1923 and is now shown on the chart as forty three feet. This should be referred to Capt. Hawley when he comes to the office.

R. L. Johnston

This is O.K. The 43' is from H-4310.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON May 31, 1924

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4227 (Additional Work)

Surveyed in 1923

Instructions dated February 16, 1923.

Chief of Party, J. H. Hawley.

Surveyed by Charles Shaw

Protracted and inked by H. E. MacEwen

Verified and Area and Depth Sheet by R. L. Johnston.

1. The records conform to the requirements of the General Instructions.
2. The method and character of operations fulfill the requirements of the General Instructions.
3. The depth and extent of dragging satisfy the specific Instructions.
4. A clearance depth was obtained over all shoals discovered sufficient to meet the needs of navigation in the particular locality, except as follows:

The 10 foot spot off Crist Pt. and the 22 foot spot west of Hoonah I. were not dragged over.

The 70 foot spot north of Harry I at Flynn Cove. This should have been dragged over as 43' was found in practically the same spot on the adjoining sheet, ^{W.D. 430} and no clearance depth obtained.

All other shoals that were not dragged over are close inshore.

5. The overlaps are sufficient.
6. There are no splits on this work.
7. The 20 foot sounding in Gedney Channel due west of Scraggy I. was cleared by a 15' drag. A 20' drag grounded and slid off this spot indicating that there is probably at least 19' of water here. An 18' drag should have been carried over this spot which would have conformed to the clearance depth in the rest of the channel.

8. The field plotting was completed to the extent prescribed in the General Instructions. None of this work had to be replotted.
9. Rating of work (Character and scope of drag operations - excellent
[Field drafting - excellent.]
10. This work was plotted on H. 4227 and the work combined on the A. and D. Sheet.
11. Reviewed by A. L. Shalowitz, May, 1924.

April 17, 1924.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in

2 volumes of ~~sounding records~~ for
wire drag

HYDROGRAPHIC SHEET 4227

Locality: Icy Strait, S. E. Alaska

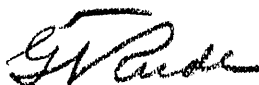
Chief of Party: J. H. Hawley in 1923

Plane of reference is mean lower low water reading

5.9 ft. on ~~tide staff~~ at
automatic gauge at Hooniah

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks



Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 2) 4227 W.D. Add. Work

State . S.E. Alaska

General locality . Icy Strait

Locality Lynn Canal to Eagle Point
East end

Chief of party . J.H. Hawley

Surveyed by J.H. Hawley and Charles Shaw

Date of survey April, Sept., and Oct. 1923

Scale . 1 to 40000

Soundings in Feet

Plane of reference M.L.L.W.

Protracted by H.E.M. Soundings in pencil by H.E.M.

Inked by H.E.M. Verified by Charles Shaw

Records accompanying sheet (check those forwarded):

1 Des. report, 1 Tide books, 2 Marigrams, 2 Boat sheets, 1 Smooth sheet.
1 Sounding books, 2 Wire-drag books, 1 Photographs.

Data from other sources affecting sheet

Remarks:

4227

Diag. Ch. No. 8802-2

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
State: <i>S. E. Alaska</i>
11-5613
DESCRIPTIVE REPORT.
<i>W. D.</i> Sheet No. <i>4227</i>
LOCALITY:
<i>Icy Strait</i>
<i>Lynn Canal to</i>
<i>Eagle Point</i>
192 <i>2</i>
CHIEF OF PARTY:
<i>J. H. Hawley</i>

4227

DESCRIPTIVE REPORT
To accompany Hydrographic (W.D.) Sheet No. 2

LIMITS:- This sheet covers parts of Lynn Canal and Icy Strait, extending from the east shore of the canal opposite the east end of the strait westward through the strait to Eagle Point. The work done on this sheet during 1922 extends from its eastern limit west to the approximate limit or a line from Point Sophia to Noon Point on Pleasant Island. On account of the shoal water making out from the south side of Icy Strait and the shoals in the vicinities of the islands and along the north shore it is believed that the work is carried as close to shore as is feasible without undue expense, except along the south shore from the shoal 1 mile west of Neck Point to Point Sophia where the work should be extended farther inshore when operations in this region are resumed. This work was done under instructions dated February 13, 1922.

METHODS OF SURVEY:- The usual methods of surveying as much of the deep water area as possible with the sweep to a minimum depth of 85 feet and then extending the work inshore by means of the drag were followed. The drag was required to a greater extent than usual on account of the increase of shoal water areas in this region. Overlaps were carefully watched and any doubtful places were re-dragged with the idea that it would be better to do this work at slight expense, even though it would later be found unnecessary, than to run the risk of having to cover splits in the future with considerable cost for rebuilding signals etc. With the exception of one near the western limit where work will be resumed, no splits on this sheet or the adjoining one to the northward were found when the work was plotted on the smooth sheets.

SHOALS AND CHANNELS:- The channel between Rocky Island and the south point of Couverden Island was dragged and proven clear to a maximum depth of from 35 to 39 feet at mean lower low water. Vessels using this passage should favor slightly the side nearest Rocky Island on account of the shoal water making out from Point Couverden. The distance saved, however, is so slight that the use of this passage is not recommended on account of the erratic currents in this locality which will be mentioned below. Passages between The Sisters Islands and Sisters Reef and south of Spasskaia Island were also dragged and proven free from dangerous obstructions.

In general the paths usually followed by vessels through this part of Icy Strait were found to be free from obstructions dangerous to navigation. Several changes in charted depths and three dangerous rocks fairly close to shore were found however and these will be mentioned in order as they occur from east to west. Some slight differences will be noted in the depths on shoals reported during the season and the depths shown on the sheet. These are due to the differences between the predicted tides used when the reports were made and the actual tides used for reducers.

The sweep caught at a point about 2 miles southeast from Rocky Island indicating a depth of 30 fathoms or less. This point was cleared with a 93-foot drag.

The sweep caught about 1/2 mile south of station SHACK and a sounding of 14 fathoms at mean lower low water was obtained from the guide launch. This point is close to a reef and was cleared with a 39-foot drag.

The drag caught about $1/3$ mile off the north end of The Sisters Islands and soundings were obtained to define the limits of the reef making off from this point.

The drag caught between The Sisters Islands and Sisters Reef and rocks with a least depth of 60 feet were found where a depth of 96 feet is charted.

A reef with a least depth of 8 feet at M.L.L.W. was found about $1/3$ mile off the south end of The Sisters Islands.

Rocks with a least depth of 32 feet were found $3/4$ mile east of Spasskaia Island. These rocks are close by a rock awash.

A rock with a least depth of 12 feet was found $1/2$ mile west of Spasskaia Island where 40 feet is charted.

Rocks with a least depth of 33 feet were found $1/3$ mile northwest from the rock just described where 57 feet is charted.

A rock awash at M.L.L.W. was found about $1/5$ mile off Neck Point at the entrance to Spasskaia Bay.

Rocks with a depth of 138 feet were found with the sweep about 2.7 miles north from Point Sophia where 180 feet is charted. This point was cleared with a 87-foot drag.

The sweep caught about $1-1/2$ miles southwest from Station MID but this point was cleared with a sweep on a later date. This occurrence is possible as on one day a part of the wire half way between buoys, where the wire drops to perhaps 180 feet, may pass over a given point and on another day the wire near a buoy, where the depth is not over 110 feet, may pass over the same point.

A reef about 400 feet long extending north and south and quite sharp with a least depth of 59 feet was found about $4-1/4$ miles southeast from Noon Point where a depth of 198 feet is charted. This shoal was cleared with a 51-foot drag. The 19-fathom shoal shown on the chart about $3-3/4$ miles south from Noon Point was cleared with a 90-foot drag.

In the above descriptions all bearings are magnetic and all depths refer to mean lower low water.

CURRENTS:- A few characteristics of the currents in this region may be noted as follows:

In Lynn Canal the flood current sets to the northward and the ebb to the southward following the general direction of the channel. The flood current is more noticeable on the east side of the channel.

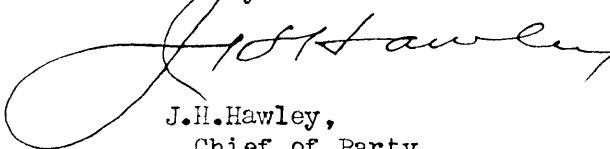
In Icy Strait the flood tide sets to the eastward and the ebb to the westward. On the north side of the strait the flood tide flows to the eastward until just past Swanson Harbor where a stronger current setting in a southerly direction past Rocky Island is encountered. This southerly current with a flood tide is noticeable as far north as Point Howard on the west side of Lynn Canal. This cross current causes strong tide rips at the entrance to Swanson Harbor with

even a slight southerly breeze.

On the south side of Icy Strait between Point Augusta and Point Sophia very little current is ordinarily encountered. On several occasions, however, a current with an estimated velocity of two or three knots was noted flowing in a westerly direction along the shore in this locality. This current continued throughout the day and seemed to have no relation to the stage of the tide. On the few occasions when this current was noted the weather conditions indicated a southeast storm on the outer coast possible in the vicinity of the entrance to Chatham Strait.

HARBORS:- Funter Bay, Swanson Harbor, Spasskaia Bay, Hooniah and Flynn Cove were used as anchorages for the work in this region. No changes from the Coast Pilot descriptions were noted except that vessels approaching Spasskaia Bay from the westward must avoid the dangers in this vicinity found during the season and referred to above.

Submitted by



J.H. Hawley,
Chief of Party.

TIDAL DATA

Hydrographic (W.D.) Sheet No. 2

Automatic tide gauge installed in Funter Bay was used for the reduction of work on this sheet as far west as The Sisters Islands. Staff readings on days when work was done were scaled from the marigrams and recorded in a tide record.

Staff reading corresponding to M.L.L.W. 6.2

Data relative to highest and lowest tides observed should be supplied by office from marigrams and previous records at this station.

A staff gauge was installed at Hooniah and used for the reduction of work west of The Sisters Islands.

Staff reading corresponding to M.L.L.W. 7.0

Data relative to highest and lowest tides observed should be obtained from previous records at this station.

Statistics for Sheet No. 2

Date	Letter	Vol.	Positions	Miles	Sndgs.
July 31	A	1	50	26.0	
August 1	B	1	52	21.0	
2	C	1	34	15.0	
3	D	1	48	18.6	
4	E	1	45	19.0	
9	F	1	21	7.5	
10	G	1	26	5.0	
11	H	1 & 2	56	13.3	
14	J	2	36	9.3	
15	K	2	32	13.0	
16	L	2	24	6.1	
17	M	2	29	12.6	
18	N	2	44	18.3	
23	P	2	23	9.8	
24	Q	2	17	5.6	
28	R	3	24	3.4	
29	S	3	42	1.7	
30	T	3	44	16.8	
31	U	3	27	6.0	13
September 1	V	3	37	14.1	
7	W	3	32	8.7	4
8	X	3	22	5.0	
9	Y	3 & 4	26	4.8	5
11	Z	4	30	8.0	4
12	A'	4	36	15.2	
13	B'	4	37	14.2	2
22	C'	4	39	7.9	
25	D'	4	8	2.4	1
26	E'	4	39	11.1	
27	F'	5	36	12.0	
28	G'	5	8	3.4	
29	H'	5	6	2.4	

TOTAL

1030

337.2

Hyd Sheet No. 4227
(Season of 1922)

The descriptive report of this sheet is comprehensive and fully covers methods of the work, shoals discovered etc. The depths given in the report are not correct owing to the fact that the tide reducers were changed in the office. This made it necessary to replot most of the drag work under eighty five feet as the effective depths were changed from one to two feet and the tide curves occurred in different places.

Three splits were developed in the verification.

The records are well kept, except that on C, T and Z days the stamp showing the length of upright has been omitted.

The plotting of the sheet was neatly and accurately done.

R. L. Johnston

No location could be found in the records for the rock awash in the entrance to Spasskaia Bay, which is mentioned in the report. It was therefor inked on the sheet in the position in which it had been plotted in pencil by the field party.

E.P.8

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 4-VEC

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

May 8, 1923.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4227

Surveyed in 1922.

Chief of Party: J. H. Hawley.
Surveyed by: J. H. Hawley and G. C. Jones.
Protracted and Inked by: C. E. Christopherson.
Verified and Area and Depth Sheet by R. L. Johnston.

1. The records conform to the requirements of the General Instructions except that on C. T. and Z days the stamp showing the length of up-right has been omitted.
2. The methods and character of operations fulfill the requirements of the General Instructions.
3. The depth and extent of dragging satisfy the specific instructions.
4. A clearance depth was obtained over all shoals discovered sufficient to meet the needs of navigation in the particular locality.
5. The overlaps are sufficient.
6. There are four splits shown on the A and D sheet. The one to the northwest of Hamus Reef lies within the area included in Wire Drag 4228. The one to the north of The Sisters is very small and practically at the end of the reef that makes out from the end of the island. It is not of sufficient importance to require additional dragging. The two splits near the western limits of the sheet should be covered when work is resumed in this locality.
7. Additional work will have to be done to cover splits as mentioned in paragraph 6. The drag should also be carried close inshore on the south side of the Strait between Point Sophia and the reef west of Neck Point.

2- Wire Drag Sheet No. 4227

8. Attention is called to the fact that a sounding of 11 feet was obtained at about 1/2 mile west of Spasskaia Island where $6 \frac{3}{4}$ fathoms is now charted.

A rock awash at M. L. L. W. and not shown on any previous charts was found at the entrance to Spasskaia Bay. No information relative to the location of it could be found in the records by the verifier, but as it was shown in pencil by the field party and also mentioned in the descriptive report, it was inked on the smooth sheet.

9. The field plotting was completed to the extent prescribed in the General Instructions. Owing to changed tide reducers the office draftsman had to replot certain portions of the work.

10. Rating of work (a. character and scope of drag operations: excellent
(b. Field drafting: excellent.

11. Reviewed by A. L. Shalowitz, May, 1923.

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. ✓4227

State . . . Southeast Alaska

General locality . Icy Strait

Locality . Lynn Canal to Eagle Point

Chief of party . . J.H.Hawley

Surveyed by . . . J.H.Hawley & G.C.Jones

Date of survey . . July 31 to September 29, 1922

Scale 1:40,000

Soundings in . . . Feet

Plane of reference . . M.L.L.W.

Protracted by C.E.C. . . Soundings in pencil by C.E.C. . .

Inked by . . C.E.C. Verified by

Records accompanying sheet (check those forwarded):

Des. report, 2 Tide books, 3 Marigrams, 1 Boat sheets,

1 Sounding books, 5 Wire-drag books, Photographs.

Data from other sources affecting sheet

Remarks: